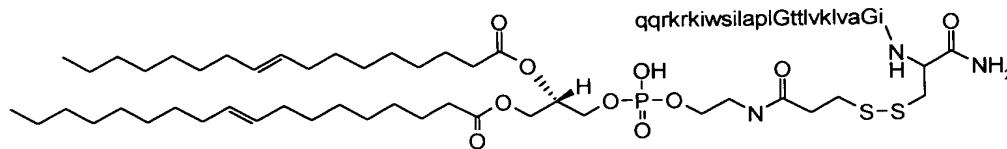


In claim 6, please change "claim 5" to --claim 1--.

7. (Amended) The compound [according to any of claims 1 - 6] of claim 1, which is



(IV)

13. (Amended) The composition of [claims 10-12] claim 36 wherein the components are in the form of an aqueous or organic solution, an aqueous or organic dispersion, or a liposome or a micelle.

Q<sup>3</sup>  
14. (Amended) Use of a composition as defined [in any one of claims 10-13] in claim 36 for transfecting a eukaryotic or prokaryotic cell in vivo or in vitro with an anionic macromolecule.

15. (Amended) Use of a composition as defined [in any one of claims 10-13] in claim 36 for transfecting a eukaryotic or prokaryotic cell in vivo or in vitro with a polynucleotide.

Q<sup>4</sup>  
17. (Amended) Use of a compound as defined [in any one of claims 1-9] in claim 1 for transfecting a cell in vivo or in vitro with a polynucleotide.

Q<sup>5</sup>  
20. (Amended) Use of a compound as defined [in any one of claims 1-9] in claim 1 for introducing in vivo or in vitro a biologically active molecule into cells.

21. (Amended) Use of a composition as defined [in any one of claims 10-13] in claim 36 for introducing in vivo or in vitro a biologically active molecule into cells.

Please add new claims 25-54 as follows:

Q<sup>6</sup>  
~~24~~ 25. Use of a compound as defined in claim 1 for transfecting a eukaryotic or prokaryotic cell in vivo or in vitro with an anionic macromolecule.

~~25~~ 26. The compounds of claim 2 wherein R<sup>1</sup> and R<sup>2</sup> are independently selected from lauroyl, palmitoyl, stearoyl and oleoyl.

~~26~~ 27. The compounds of claim 2 wherein X is -S-S-.

~~27~~ 28. The compounds of claim 3 wherein X is -S-S-.

~~28~~  
~~29~~ The compounds of claim 2 wherein R<sup>3</sup> is Gln-Gln-Arg-Lys-Arg-Lys-Ile-Trp-Ser-Ile-Leu-Ala-Pro-Leu-Gly-Thr-Thr-Leu-Val-Lys-Leu-Val-Ala-Gly-Ile-NH-CH[CONH<sub>2</sub>](CH<sub>2</sub>)- with a reversed amide backbone or derivatives thereof consisting of at least 50 % D-amino acids.

~~29~~  
~~30~~ The compounds of claim 3 wherein R<sup>3</sup> is Gln-Gln-Arg-Lys-Arg-Lys-Ile-Trp-Ser-Ile-Leu-Ala-Pro-Leu-Gly-Thr-Thr-Leu-Val-Lys-Leu-Val-Ala-Gly-Ile-NH-CH[CONH<sub>2</sub>](CH<sub>2</sub>)- with a reversed amide backbone or derivatives thereof consisting of at least 50 % D-amino acids.

~~30~~  
~~31~~ The compounds of claim 4 wherein R<sup>3</sup> is Gln-Gln-Arg-Lys-Arg-Lys-Ile-Trp-Ser-Ile-Leu-Ala-Pro-Leu-Gly-Thr-Thr-Leu-Val-Lys-Leu-Val-Ala-Gly-Ile-NH-CH[CONH<sub>2</sub>](CH<sub>2</sub>)- with a reversed amide backbone or derivatives thereof consisting of at least 50 % D-amino acids.

~~31~~  
~~32~~ The compounds of claim 2 wherein R<sup>3</sup> is D-Gln-D-Gln-D-Arg-D-Lys-D-Arg-D-Lys-D-Ile-D-Trp-D-Ser-D-Ile-D-Leu-D-Ala-D-Pro-D-Leu-Gly-D-Thr-D-Thr-D-Leu-D-Val-D-Lys-D-Leu-D-Val-D-Ala-Gly-D-Ile-NH-[CONH<sub>2</sub>]-CH-(CH<sub>2</sub>)-.

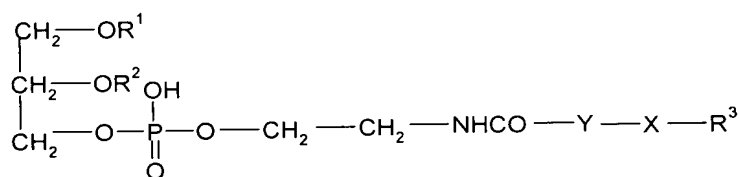
~~32~~  
~~33~~ The compounds of claim 3 wherein R<sup>3</sup> is D-Gln-D-Gln-D-Arg-D-Lys-D-Arg-D-Lys-D-Ile-D-Trp-D-Ser-D-Ile-D-Leu-D-Ala-D-Pro-D-Leu-Gly-D-Thr-D-Thr-D-Leu-D-Val-D-Lys-D-Leu-D-Val-D-Ala-Gly-D-Ile-NH-[CONH<sub>2</sub>]-CH-(CH<sub>2</sub>)-.

~~33~~  
~~34~~ The compounds of claim 4 wherein R<sup>3</sup> is D-Gln-D-Gln-D-Arg-D-Lys-D-Arg-D-Lys-D-Ile-D-Trp-D-Ser-D-Ile-D-Leu-D-Ala-D-Pro-D-Leu-Gly-D-Thr-D-Thr-D-Leu-D-Val-D-Lys-D-Leu-D-Val-D-Ala-Gly-D-Ile-NH-[CONH<sub>2</sub>]-CH-(CH<sub>2</sub>)-.

~~34~~  
~~35~~ The compounds of claim 5 wherein R<sup>3</sup> is D-Gln-D-Gln-D-Arg-D-Lys-D-Arg-D-Lys-D-Ile-D-Trp-D-Ser-D-Ile-D-Leu-D-Ala-D-Pro-D-Leu-Gly-D-Thr-D-Thr-D-Leu-D-Val-D-Lys-D-Leu-D-Val-D-Ala-Gly-D-Ile-NH-[CONH<sub>2</sub>]-CH-(CH<sub>2</sub>)-.

~~35~~  
~~36~~ A composition comprising at least at least one compound of formula:

(I)



wherein  $R^1$  and  $R^2$  are a hydrocarbyl moiety of a straight-chain or branched-chain, saturated or unsaturated aliphatic carboxylic acid or a phospholipid moiety,  $R^3$  is a basic, membrane disturbing peptide with a reversed amide backbone, Y is  $C_{2-10}$  alkylene, X is -C(O)-NH- or -S-S- and salts thereof and a helper lipid.

~~36~~  
~~37~~ The composition of claim ~~36~~ further comprising a short chain phospholipid.

~~37~~  
~~38~~ The composition of claim ~~37~~ further comprising a cationic lipid.

~~38~~  
~~39~~ The composition of claim ~~38~~ further comprising an additional transfection reagent.

~~39~~  
~~40~~ The composition of claim 36 further comprising a cationic lipid.

~~40~~  
~~41~~ The composition of claim 36 further comprising an anionic macromolecule.

~~41~~  
~~42~~ The composition of claim 41 wherein the anionic macromolecule is a polynucleotide.

~~42~~  
~~43~~ The composition of claim 41 further comprising a polycationic polymer.

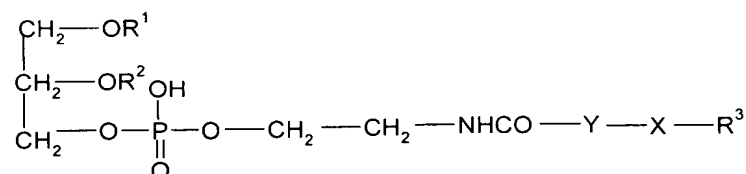
~~43~~  
~~44~~ The composition of claim 43 wherein the polycationic polymer is polyethyleneimine.

~~44~~  
~~45~~ The composition of claim 36 further comprising a polycationic polymer.

~~45~~  
~~46~~ The composition of claim 45 wherein the polycationic polymer is polyethyleneimine.

~~46~~  
~~47~~ A process for transfecting a cell in vivo or in vitro with an anionic macromolecule, comprising contacting a cell in vivo or in vitro with the anionic macromolecule in the presence of compounds of formula:

(I)



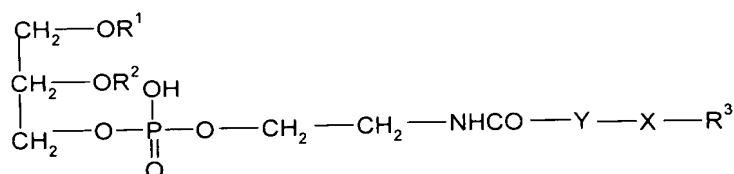
wherein  $R^1$  and  $R^2$  are a hydrocarbyl moiety of a straight-chain or branched-chain, saturated or unsaturated aliphatic carboxylic acid or a phospholipid moiety,  $R^3$

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is a basic, membrane disturbing peptide with a reversed amide backbone, Y is C<sub>2-10</sub> alkylene, X is -C(O)-NH- or -S-S- and salts thereof.

~~47~~  
~~48~~ A process for transfecting a cell in vivo or in vitro with an anionic macromolecule, comprising contacting a cell in vivo or in vitro with the anionic macromolecule in the presence of a composition comprising at least one compound of formula:

(I)



wherein R<sup>1</sup> and R<sup>2</sup> are a hydrocarbyl moiety of a straight-chain or branched-chain, saturated or unsaturated aliphatic carboxylic acid or a phospholipid moiety, R<sup>3</sup> is a basic, membrane disturbing peptide with a reversed amide backbone, Y is C<sub>2-10</sub> alkylene, X is -C(O)-NH- or -S-S- and salts thereof and a helper lipid.

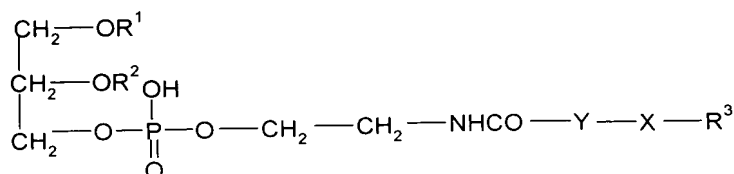
~~48~~  
~~49~~ The process of claim 48, wherein the composition further comprises a short chain phospholipid.

~~49~~  
~~50~~ The process of claim 49, wherein the composition further comprises a cationic lipid.

~~50~~  
~~51~~ The process of claim 48, wherein the composition further comprises a cationic lipid.

~~51~~  
~~52~~ A process for introducing a biologically active anionic molecule into a cell in vivo or in vitro with an anionic macromolecule, comprising contacting a cell in vivo or in vitro with the anionic macromolecule in the presence of a composition comprising at least one compound of formula:

(I)



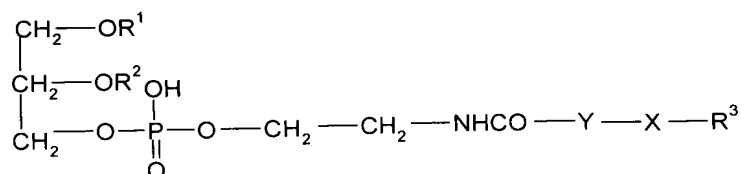
wherein R<sup>1</sup> and R<sup>2</sup> are a hydrocarbyl moiety of a straight-chain or branched-chain, saturated or unsaturated aliphatic carboxylic acid or a phospholipid moiety, R<sup>3</sup> is a

26

basic, membrane disturbing peptide with a reversed amide backbone, Y is C<sub>2-10</sub> alkylene, X is -C(O)-NH- or -S-S- and salts thereof and a helper lipid.

~~S2~~  
~~S3~~ A process for introducing in vivo or in vitro a biologically active anionic molecule into a cell, comprising contacting a cell in vivo or in vitro with the anionic macromolecule in the presence of a compound of formula:

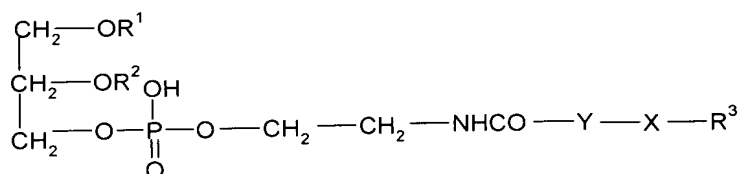
(I)



wherein R<sup>1</sup> and R<sup>2</sup> are a hydrocarbyl moiety of a straight-chain or branched-chain, saturated or unsaturated aliphatic carboxylic acid or a phospholipid moiety, R<sup>3</sup> is a basic, membrane disturbing peptide with a reversed amide backbone, Y is C<sub>2-10</sub> alkylene, X is -C(O)-NH- or -S-S- and salts thereof.

~~S3~~  
~~S4~~ A process for introducing in vivo or in vitro a biologically active anionic molecule into a cell, comprising contacting in vivo or in vitro a cell with the anionic macromolecule in the presence of a composition comprising at least one compound of formula:

(I)



wherein R<sup>1</sup> and R<sup>2</sup> are a hydrocarbyl moiety of a straight-chain or branched-chain, saturated or unsaturated aliphatic carboxylic acid or a phospholipid moiety, R<sup>3</sup> is a basic, membrane disturbing peptide with a reversed amide backbone, Y is C<sub>2-10</sub> alkylene, X is -C(O)-NH- or -S-S- and salts thereof and a helper lipid.